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BY ELECTRONIC FILING

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Filing: IB Docket No. 06-123

Dear Ms. Dortch:

SES Americom, Inc. ("SES Americom"), by its attorneys, hereby responds to recent *ex parte* presentations in the above-referenced proceeding. SES Americom opposes the request of EchoStar Satellite L.L.C. ("EchoStar") that the Commission revise the rules and policies it adopted in the *17/24 GHz Order*[1] in order to provide increased flexibility to licensees to operate at an offset from one of the orbital locations identified in the decision on a full power basis.[2] SES Americom submits that the EchoStar proposal would create more harm than it would solve because it would undermine the Commission's four-degree spacing policy for 17/24 GHz BSS slots and permanently impair the use of orbital locations that have been designated for 17/24 GHz BSS service.

Under the terms of the *Order*, offset operations are permitted provided that the nonconforming licensee does not cause increased interference to adjacent conforming operations and accepts any additional interference received. *See Order* at ¶ 74. This is consistent with

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1 *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band*, FCC 07-76 (rel. May 4, 2007) ("*17/24 GHz Order*" or "*Order*").

2 EchoStar Satellite L.L.C. *Ex Parte* Presentation in IB Docket No. 06-123, May 25, 2007 ("EchoStar May 25 *Ex Parte*").

general Commission policy to put the burden of noncompliant operations on the noncomplying party. EchoStar, however, argues that licensees should be allowed to operate at full power at locations within 1 degree of the orbital locations identified for 17/24 GHz BSS by the Commission without any obligation to reduce power, provided that the adjacent affected conforming orbital location is "vacant" (*i.e.*, has no licensee or pending application) when the offset authority is sought or subsequently becomes vacant. EchoStar May 25 *Ex Parte* at 3.

EchoStar proposes this change because it claims that the orbital spacing plan adopted in the *Order* "results in numerous Reverse Band orbital locations that are located . . . either too close or too far from existing satellite operations, particularly DBS operations, to permit the most efficient use of the spectrum." *Id.* at 2. Specifically, EchoStar states that a single antenna cannot be efficiently used to receive both 17/24 GHz and DBS signals if the two satellites are separated by between 0.7 and 1.8 degrees. *Id.* at 1. EchoStar refers to this distance as the "sour spot." *Id.* at 2.

As a threshold matter, EchoStar significantly overstates the magnitude of the problem here. Although three of the five U.S. DBS orbital locations are between 0.7 and 1.8 degrees from the nearest nominal 17/24 GHz orbital location, in each case a shift of only 0.3 degrees is needed to take the 17/24 GHz slot outside of the so-called "sour spot." *See* attached Technical Analysis, Tables 1 and 2. SES Americom has determined that with only very modest reductions in power (about 1 dB), these small offsets can be effectuated without creating increased interference to adjacent 17/24 GHz locations. *See id.* at 1.

Thus, the flexibility granted to licensees under the existing *Order* can fully accommodate single-dish service to all five U.S. DBS orbital locations with limited adjustments needed to the offset satellite's power levels. EchoStar's claim that the "shift 'off-slot' and resulting power reductions that are required for EchoStar to avoid the 'sour spots' is dramatic" (EchoStar May 25 *Ex Parte* at 3) simply does not conform with the technical facts.

Furthermore, the modified flexibility EchoStar proposes would seriously impair the usefulness of adjacent 17/24 GHz orbital locations and thereby undermine the benefits of the four-degree spacing policy adopted by the Commission in this band. Under EchoStar's approach, an applicant could choose an offset of up to 1 degree from the nominal 17/24 GHz orbital location and operate there permanently without reducing power to accommodate use of the affected adjacent 17/24 GHz location. SES Americom agrees with DIRECTV that the Commission should not implement a policy "that would forever compromise any number of the orbital locations designated for use in [the 17/24 GHz] service by the Commission, making them significantly less technically capable and therefore significantly less likely to be used."[3] Thus, the cost-benefit analysis here clearly supports the policy choice the Commission has already made, which will permit single-dish 17/24 GHz and DBS service in all instances with only minor offsets and power reductions to protect adjacent operators.

EchoStar has alleged that the optimum situation is to allow both single-dish and single feed service, which requires a separation between satellites of .7 degrees or less. EchoStar May 25 *Ex Parte* at 1-2 n.2. Even under this standard, however, EchoStar's approach has no

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[3] DIRECTV, Inc. *Ex Parte* Presentation in IB Docket No. 06-123, June 15, 2007 at 2.

benefits over the Commission's current rules. The 17/24 GHz orbital plan adopted by the Commission will accommodate single-feed service, with the modest offsets discussed here, for all the U.S. DBS locations except 101° W.L. and 61.5° W.L. Single-feed service to 101° W.L. would not be possible even with the added flexibility proposed by EchoStar, because that position is two degrees from the closest 17/24 GHz location on either side. Allowing an offset of up to 1 degree in the 17/24 GHz location, as proposed by EchoStar, would still mean that the distance between the two spacecraft is 1 degree or more. Thus, the offset would result in changing the orbital distance between the 17/24 GHz location and 101° W.L. from 2 degrees, which is not in the .7-1.8 degree "sour spot," to 1 degree, which is.

SES Americom, however, would not object to a minor change in the Commission's 17/24 GHz orbital assignments to accommodate the option for use of a single-dish, single-feed solution in connection with DBS operations at 61.5° W.L. Specifically, the Commission could shift the 17/24 GHz orbital locations in the 43° W.L.-63° W.L. portion of the arc by one degree to the East, resulting in assignments at four degree intervals from 42° W.L. to 62° W.L. This modest change would allow a single-feed antenna for DBS operations at 61.5° W.L. and 17/24 GHz operations at 62° W.L. without reducing the number of 17/24 GHz orbital assignments available or impairing the usefulness of any slot. The Commission's four-degree spacing framework would be maintained, with the exception that there would be a five-degree separation between 62° W.L. and 67° W.L.

For the foregoing reasons, SES Americom believes that the rules adopted in the *17/24 GHz Order* should be maintained and that the EchoStar proposal should be rejected. However, we would not object to a minor adjustment of the 17/24 GHz orbital assignments in the 43° W.L.-63° W.L. portion of the arc. Please direct any questions regarding this submission to the undersigned.

Respectfully submitted,

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cc: Robert Nelson
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Technical Analysis

Table 1 shows the 17/24 GHz orbital locations adopted by the FCC. These have uniform 4° spacing.

The first two rows of Table 2 show the nominal orbital locations and clusters of the U.S. DBS slots. The third and fourth rows show the FCC proposed 17/24 GHz slots closest to the DBS assignments, and the corresponding orbital separation. In its *ex parte* filing, EchoStar has stated that the "sour spot" – the distance between satellites that prevents reception of both DBS and 17/24 GHz signals using a single dish – is .7 to 1.8 degrees. Row 5 indicates whether the relevant 17/24 GHz orbital assignment is in this "sour spot."

Row 6 shows the offset necessary to take the 17/24 GHz satellite out of the "sour spot." Specifically, it shows the minimum distance the 17/24 GHz satellite must be offset from the nominal orbital location to either reduce the orbital separation to the closest DBS location to 0.7°, which will enable the use of a single feed antenna for DBS and 17 GHz reception, or to increase the separation to 1.8°, which will enable the use of a single antenna with multiple feeds for DBS and 17 GHz reception. The offset needed to avoid the "sour spot" is 0.3° in all cases.

SES Americom has evaluated the effect of a 0.3 degree offset on 17/24 GHz operations under the framework adopted by the Commission and has determined that the impact is not significant. Under the Commission's rules, the offset 17/24 GHz operator will need to impose no greater interference on the affected adjacent system than would result from four-degree spaced operations. In addition, the offset operator must accept additional interference from the adjacent system that results from the closer spacing. Neither factor will have a material impact on operations.

We have calculated that the reduction in the EIRP of the offset satellite needed to limit interference to the adjacent satellite is approximately 1.0 dB. Either the satellite can be operated with 1 dB lower power with slightly decreased link margins, or the offset operator can seek to coordinate with the adjacent satellite to permit operations with no reduction in power. Coordination might involve, for instance, using channel frequency plans that involve a shift of 6.5 MHz so that frequency gaps between channels at one slot overlap with the active carrier spectra at the adjacent orbital slot. The advantage due to using the frequency gaps is estimated to be about 1 dB.

SES Americom estimates that the impact on the offset satellite of increased interference due to reduced spacing (*i.e.*, the reduction in the single entry C/I ratio in the channels of the offset satellite) is approximately 1.0 to 1.5 dB. The loss in the threshold level, however, is much smaller, approximately 0.1 dB, by virtue of the fact that the single entry C/I is typically 15 dB higher than the threshold C/N.

Thus, with small offsets and related minor operational adjustments, a single dish can be used for reception of 17/24 GHz and DBS transmissions in all instances, and a single dish with a single feed can be used in connection with the 110° W.L., 119° W.L., and

148° W.L. DBS locations. A single-feed dish cannot be used at 101° W.L., but there are alternative solutions that may be considered. One alternative is to modify the receiver feed for FSS Ka-band signals at 99° W.L. to a feed that receives Ka-band and 17 GHz signals from 99° W.L. A similar solution may also be implemented for 17 GHz reception at 103° W.L. One could then use a multifeed antenna system with one feed for DBS from 101° W.L., one composite feed for reception of Ka-band and 17 GHz carriers from 99° W.L., and one composite feed for reception of Ka-band and 17 GHz carriers from 103° W.L.

Such a solution of modifying a currently used multifeed antenna for 17 GHz reception can be extended to another situation also. A tri-feed antenna for DBS reception of signals from 101° W.L., 110° W.L. and 119° W.L. can be modified so that the feeds used for reception of signals from 110° W.L. and 119° W.L. can be replaced by composite feeds: one composite feed for the reception of DBS from 110° W.L. and 17 GHz from 110.7° W.L., and the second composite feed for the reception of DBS and 17 GHz signals from 119° W.L.

If the operator of the DBS system at 61.5° W.L. wishes to use 17/24 GHz spectrum for the benefit of the consumers tuned to 61.5° W.L., it can use the 17/24GHz slots 59° W.L. and/or 67° W.L.. The use of these slots requires a second feed in the consumer antenna. The 63° W.L. slot is only 1.5° from 61.5° W.L., which is too close to be used with a second feed. It is also too far to use a single feed.

An alternative solution that the FCC could consider is to change the 17/24 GHz orbital locations between 43° W.L. and 63° W.L. by shifting them one degree to the East, resulting in assignments every four degrees between 42° W.L. and 62° W.L. Then the 62° W.L. location is only 0.5° from the DBS location 61.5° W.L., allowing the implementation of a single feed solution. The consequence of this shift is that there is 5° spacing instead of 4° spacing between 67° W.L. and the adjacent location to the East.

Table 1. 17/24 GHz slots adopted by the FCC

43.00°	63.00°	83.00°	103.00°	123.00°	143.00°	163.00°
47.00°	67.00°	87.00°	107.00°	127.00°	147.00°	167.00°
51.00°	71.00°	91.00°	111.00°	131.00°	151.00°	171.00°
55.00°	75.00°	95.00°	115.00°	135.00°	155.00°	175.00°
59.00°	79.00°	99.00°	119.00°	139.00°	159.00°	179.00°

Table 2. Orbital Analysis

1. Nominal orbital locations of the U.S. DBS Assignments	61.5°W	101°W	110°W	119°W	148°W
2. Orbital clusters around nominal DBS locations	61.3°W to 61.7°W	100.8°W to 101.2°W	109.8°W to 110.2°W	118.8°W to 119.2°W	147.8°W to 148.2°W
3. FCC 17/24 GHz slot closest to the nominal location of the U.S. DBS assignments	63°W	99°W, 103°W	111°W	119°W	147°W
4. Orbital separation between the FCC 17/24 GHz slot closest to the nominal location of the U.S. DBS assignments	1.5°	2°	1°	0°	1°
5. Is the closest FCC 17/24 GHz slot in the "sour spot" between .7 degrees and 1.8 degrees from the closest DBS location?	Yes	No	Yes	No	Yes
6. Minimum amount by which the 17/24 GHz satellite needs to be moved so that a single antenna can be used (orbital separation 0.7° or lower for single feed, orbital separation of 1.8° or more for single antenna with multiple feeds)	0.3°	0°	0.3°	0°	0.3°
7. New orbital position of the 17/24 GHz satellite	63.3°W	101°W	110.7°W	119°W	147.3°W
8. Closest FCC 17/24GHz slot affected by less than 4° spacing	67°W	--	107°W	--	151°W

DECLARATION OF KRISH JONNALAGADDA

I, Krish Jonnalagadda, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing response; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the response and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Krish Jonnalagadda
Manager, Satellite Market Development
SES Americom, Inc.

Dated: July 10, 2007